

APPENDIX 5-8

RECLAMATION AND ENHANCEMENT PLAN

Some of the Information for Appendix 5-8 is hard copies. Electronic copies do not exist for all information contained within the Appendix.

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Div. of Oil, Gas & Mining

Reclamation and Enhancement Plan Associated with the Lila Canyon Mine Site

I. Description of Existing Area

The Lila Canyon Mine constitutes approximately 42.6 acres within the disturbed area boundary. For the purpose of reclamation, the total area is divided into two units. The upper unit consists of the water treatment area and the portal pad. The lower unit consists of the majority of the facilities; bath house, parking, shop, and coal handling structures, (See Plate 5-2 Surface Facilities). In addition to the above, there is a spoil/refuse disposal area and a sediment pond. The actual disturbance, pads, silos, coal processing structures, parking constitute a total of 25.3 acres. The pond is the only structure that will remain through phase 2 bond liability.

This new disturbance constitutes a loss of approximately 40 acres of critical high value big game winter range. In addition, it distracts from the general aesthetics of the upper reaches of Lila Canyon.

The following reclamation plan is designed to rehabilitate this area to such a degree that the appearance would be aesthetically compatible with the adjacent undisturbed area and reestablish a desirable and diverse vegetative cover that will enhance wildlife habitat and domestic grazing.

II. Demolition and Clean Up

After abandonment the area will be cleared of all mine related material and structures. The majority of the coal handling equipment; belt lines, conveyors, and some of the metal fab buildings, will be sold as used equipment and removed prior to demolition. The balance of the structures will be demolished utilizing heavy equipment such as; dozers, loaders, trackhoes, various shears for steel dismantling etc. The trash (non metal, non concrete material) will be removed from the site and hauled to an approved land fill. Any contaminated soil or debris, such as coal refuse, that has petroleum additives would be hauled to an approved disposal site. The balance of the non-combustible, non-ferrous debris such as concrete would be buried on site.

All material with salvage value would be removed by a licensed salvage company.

III. Reclamation Plan

Following the cessation of mining, the portal cuts can be brought back to approximate original contours.

Earthwork

*Topsoil amounts can be found in Section 232.100 and is calculated from Plate 2-3
Concrete amounts can be found in Section 520.*

*Coal Mine Waste amounts can be found Page 2 and Figs 1 & 2 in Appendix 5-7.
General back fill can be found in Table 1 of Appendix 5-4.*

Pad and Facility Site- This area would be recontoured utilizing equipment such as dozers, scrapers, backhoes, trackhoes, trucks, etc. The level nature of the topography would allow the equipment to work in unison.

To create a natural slope similar to the premining topography (see Plate 7-7 Post Mining Contour Map), the natural channels would be reconstructed and rip rap to minimize the potential for erosion as detailed in Chapter 7 Appendix 7-4. Fill will be placed in a manner as to prevent water channelization.

Sediment Pond- Plate 7-7 shows the surface configuration for the area at Phase I bond release. At Phase I bond release, the area will be backfilled and graded to the final configuration except for the sediment pond. The sediment pond will be removed after the Operator demonstrates that vegetation adequately controls erosion..

Erosion

Following the ripping the stored topsoil (growth media) would be spread to a uniform depth over the entire lower area.

It is imperative that as the area is recontoured that the surface is pock-marked (see Figure 1). Pock-marking creates a very uneven surface which to a large degree diminishes the likelihood of erosion (gullies and rills) and enhances the success of revegetation.

In conjunction with the pock-marking the trackhoe can cast any vegetation; dead trees, large rocks, back onto the recontoured surface. The pock-marking creates a more mesic site by trapping precipitation, both rain and snow, in the depressions. The debris (dead trees, rocks etc.) on the surface accomplish the same function to a lesser degree by providing solar protection. In addition, the combination of the above makes the site more aesthetically compatible with the adjacent undisturbed areas and to a large degree discourages both domestic stock as well as big game from adversely impacting the site until the vegetation can become established.

Revegetation

In conjunction with the earth moving the site will be hydro seeded, mulched, tackafied and

fertilized. The following methodologies have been incorporated on numerous sites on both private and federal lands and have proven very successful frequently allowing Phase 2 Bond release in as little as three growing seasons.

A. Methodology-Seeding and Mulching

A hydro-seeder is positioned directly behind the trackhoe as the hoe recontours and implements the site seed bed preparation, the hydro-seeder can spray over the hoe or utilize a hose line to apply the seed in combination with 500#/acre wood fiber-mulch and 100#/acre of a tac agent. Following the seeding the entire area is then over sprayed with 1500 to 2000 pounds of wood fiber mulch per acre.

An additional 100#/acre of tac and fertilizer, choice and application rate to be determined by the testing in section 243., would be added to this mulch slurry. Fertilizer and seed will not be mixed during hydroseeding operations. The lower area would be hydro-seeded and mulched utilizing the same procedures with the exception the operation can occur as each area is ready and should not interfere with adjacent earthmoving activities.

Depending on weather conditions the hydro-mulched areas should be allowed to harden off (dry on the surface) from 24 to 72 hours before the area is walked on.

B. Methodology-Seedling Planting

Woody plants (shrubs are a component in final reclamation seed mix. Two years following reclamation an ocular estimate of the reclaimed site will be conducted. If it appears that the woody plant density is lacking, containerized or bare rooted stock may be planted to supplement stocking. The species and numbers will be determined from the evaluation of the ocular estimates and with consultation with the Division and DWR. The operator will follow R645-301-357.311.

The planting procedures as outlined must be strictly adhered to in order to insure a reasonable degree of success. The following is a list of key points:

1. Live Seedlings - ideally dormant planting stock
2. Stock - primarily root mass kept moist at all times
3. Position of seedlings to maximize survival potential
4. Proper Planting Procedure (Figure 4)
 - A. Straight and natural root alignment (no "J" roots)

- B. Firm soil placement length of root mass (no air pockets)
- C. The root collar needs to be ½ to 1 inch below grade (soil depth)

The actual planting of seedling can follow the seeding mulching anywhere from 24 hours up to two years with little or no adverse results. Ideally, planting should occur as late as possible in the fall prior to the first snow or as early in the spring as the site is accessible. Fall planting normally produces better results and is not as vulnerable to weather conditions. In both cases, survival will increase if the planting stock is dormant when planted.

The root mass should be kept moist at all times, during transport, handling and planting. This is somewhat easier with containerized stock, but can be accomplished with bare root stock if a few simple procedures are followed.

A good procedure to insure moist roots on bare root stock is to mix a slurry of vermiculite and/or potting soil in a 30 gallon water filled barrel. Cut pieces of burlap approximately 18X24 inches and soak overnight in the slurry. Wrap the root mass of the bare root stock loosely in a roll of saturated burlap prior to planting. Each roll should contain 50 to 100 seedling loosely rolled within the burlap and placed in a planting bucket or bag for field use. Periodically during the day the rolls can be wet down in the event they start to dry.

It is imperative to have the hole dug and ready to plant, prior to removing the seedling from the container or burlap roll. In warm or windy conditions a seedling's root hairs can dry out in as little as seven seconds, effectively killing the plant.

When selecting the location for the seedling always keep in mind to maximize potential for moisture and shade, select "depressions" over "humps" and areas adjacent to rocks, dead trees, etc. to provide solar protection. In pock marks, the seedling should be placed approximately one-third the way up from the bottom. This area allows the roots to extend into the moist soil and avoids having the seedling covered by sluffing or siltation. (See Figure 2)

The last area of concern is to utilize correct planting procedures. There are a variety of planting tools on the market. They range from a 16 inch tile spade to a region 6 "hoedad." Any tool capable of digging a hole at least two inches deeper than that the root mass is adequate.

It is imperative that the root mass is placed in the hole in a straight near natural configuration. The soil should be firmly pressed around the roots utilizing your hand, not a foot or stick. The planter must make sure there are no air pockets left in the hole, and ensure the seedling is planted to the correct depth.

This is accomplished by showing each planter the location of the root crown. It is advantageous for the root crown to be covered by ½ to 1 inch of soil at time of planting. This allows the soil to settle without exposing the root crown. (See Figure 3)

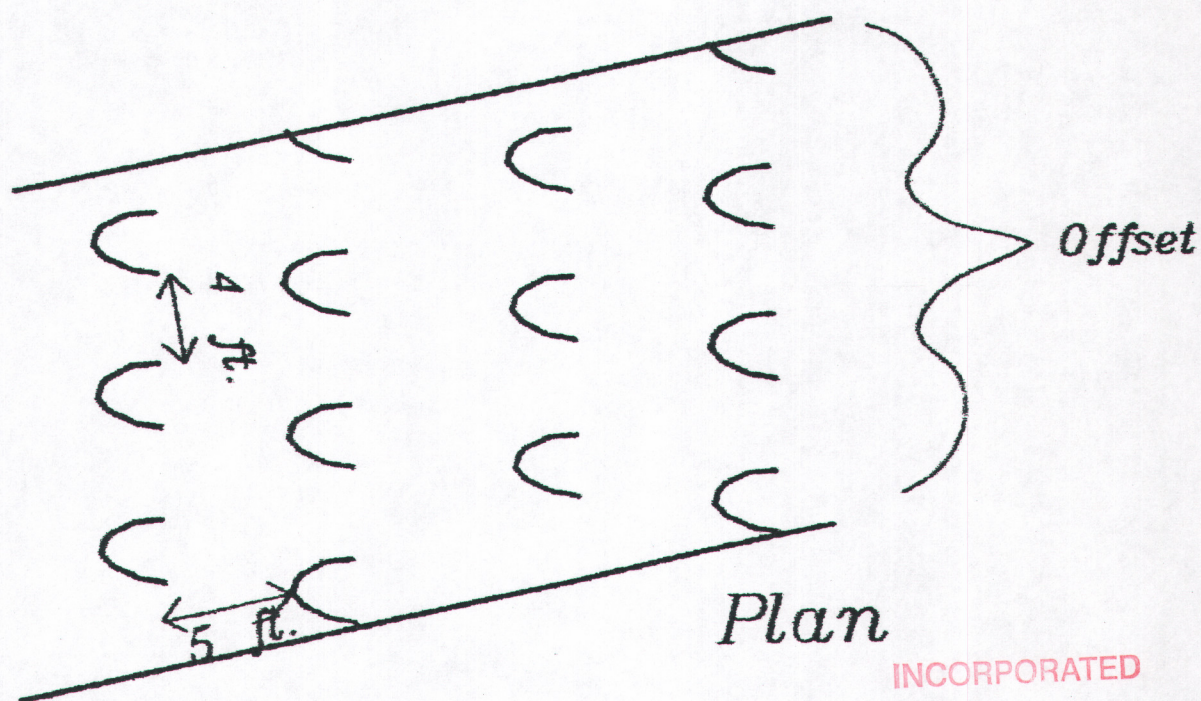
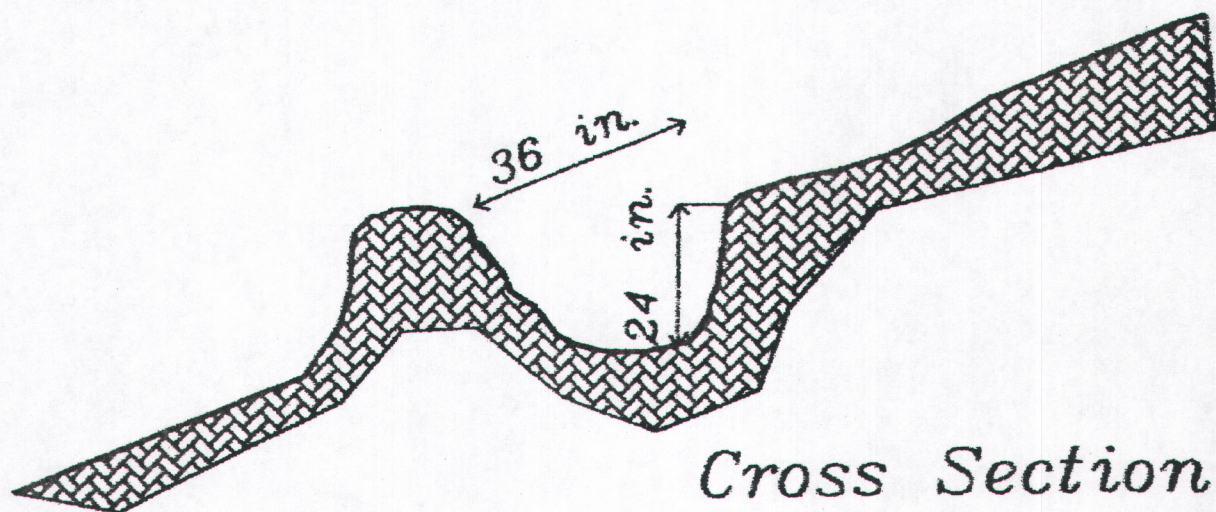
Following the planting all trash containers etc. would be removed from the site. A four strand barb-wire fence will be constructed around the lower area to preclude domestic stock.

A sign saying "This Area is Temporarily Closed for Reclamation" should be posted on the fence and maintained until the site is revegetated. After the vegetation is well established (Phase 2 Bond Release) the sediment pond can be removed by simply recontouring back over the pond area.

The same seeding and planting methodologies will be utilized to revegetate this small area.

Figure 1

Pock Mark Configuration

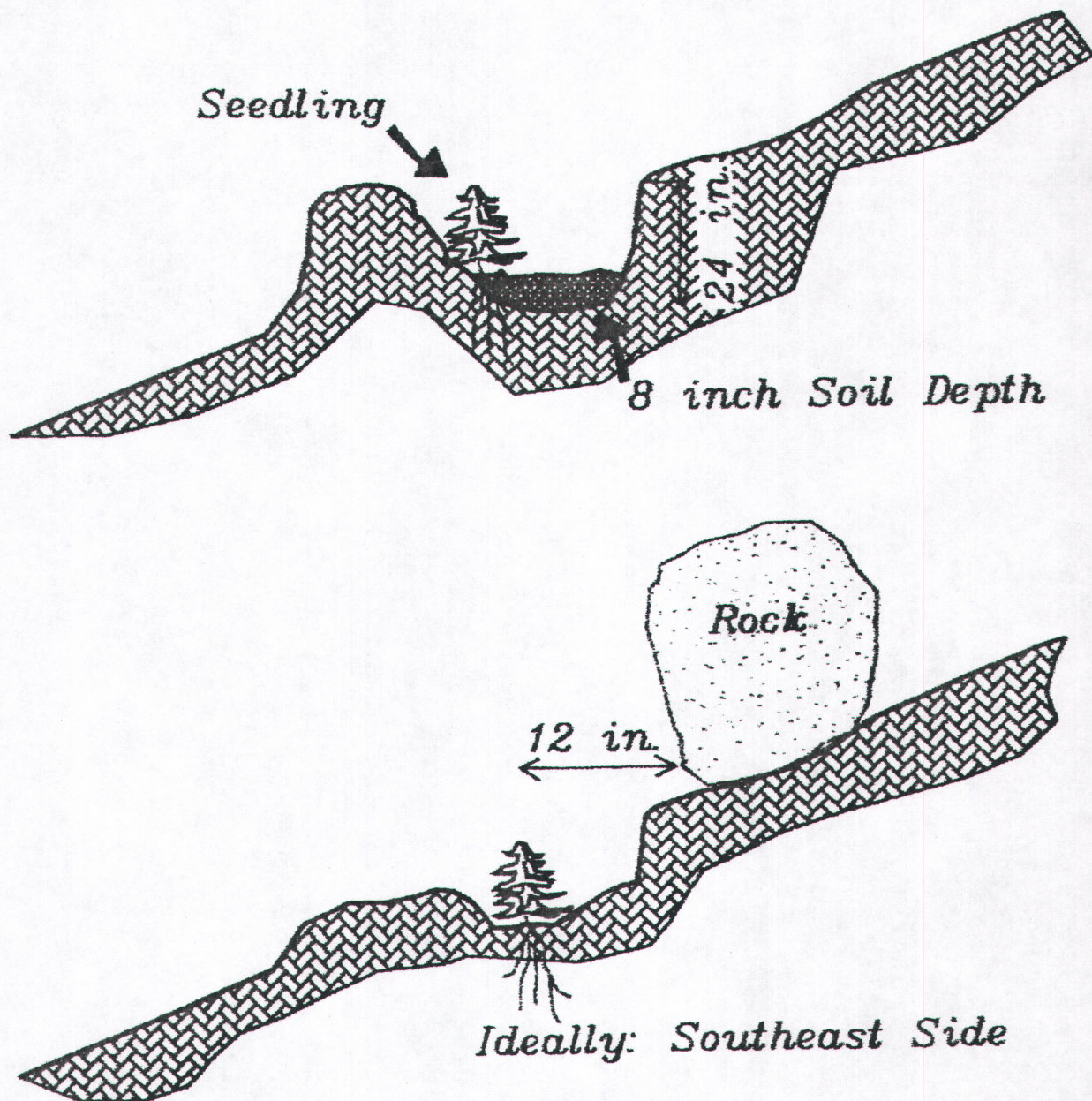


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Figure 2 Seedling Locations



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Figure 3 Seedling Planting Procedure

